



PATENT
Customer No. 22,852
Attorney Docket No. 05788.0157

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:)
Eduardo GRIZANTE REDONDO et al.) Group Art Unit: 1774
Application No.: 09/815,311) Examiner: Gray, Jill M.
Filed: March 23, 2001)
For: LOW-SMOKE SELF-)
EXTINGUISHING ELECTRICAL)
CABLE AND FLAME-)
RETARDANT COMPOSITION)
USED THEREIN)

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

DECLARATION UNDER 37 C.F.R. § 1.132

I, Eduardo Grizante Redondo, declare and state that:

1. I am a Brazilian citizen, residing at Via Ada Negri, 5 20052 Monza

(MILAN), Italy.

2. I have been awarded a degree in Chemical Engineering from 1980.

3. I have been employed by Pirelli Cavi e Sistemi Energia S.p.A. ("PIRELLI")

since 1986, and I am presently employed as a Research and Development Director in the Research and Development Materials Laboratory at PIRELLI. During my employment at PIRELLI, I have been engaged in the research and development of electrical cable compositions.

4. I am one of the inventors of U.S. Application No.: 09/815,311. I am also a named inventor on over a dozen patents and published patent applications in the United States and Europe, regarding electrical cable compositions.

5. Given my education and experience, particularly in the area of thermoplastic polymers, I consider myself able to provide the following testimony based on my reading of U.S. Patent No. 5,707,732 ("Sonoda et al.") and U.S. Patent No. 6,262,161 B1 ("Betso et al.").

6. Sonoda et al. discloses an electrical cable comprising a core surrounded by a composition comprising 100 parts by weight of a mixture of resins and 5 to 250 parts by weight of a flame retardant compound. Col. 1, lines 47-55. The resin mixture comprises a (i) polyethylene, a (ii) polyethylene, and an option (iii) copolymer, where the (i) and (ii) polyethylenes may be modified with an unsaturated aliphatic diacid anhydride through grafting or copolymerization. Col. 1, line 56 - col. 2, line 3. Sonoda et al. provides a detailed explanation of the modification at columns 5 and 6. I note that Sonoda et al. then discloses that these copolymers can be made hydrolysable so that they can be moisture cured. Col. 6, lines 41-42. Specifically, the reference teaches the grafting of an alkenyl trialkoxy silane. Col. 6, lines 42-56.

7. Betso et al. discloses a composition having enhanced ignition resistance comprising at least one interpolymer, at least one filler, and at least one component selected from fillers, metal borates, processing aids, initiators, coupling agents, and amine stabilizers. Abstract. Betso et al. teaches that when the coupler and/or initiator is present, that different forms of coupling may occur. Col. 10, lines 38-39. Specifically, the amount of ingredients, the type of ingredients present, and the conditions to which

the ingredients are subjected will determine what kind of end product is achieved. Col. 10, lines 59-61. Depending upon these factors, the coupling agent will either couple polymer to polymer, filler to filler, polymer to filler, or a combination of these. Col. 10, lines 40-55.

8. In my opinion, a person of ordinary skill in the art would recognize that Sonoda et al. discloses the ingredients and conditions for the well-known practice of using an unsaturated aliphatic diacid anhydride to compatibilize filler and polymeric components. This is one of the possible outcomes described by Betso et al. It is also my opinion that a person of ordinary skill in the art would recognize that Sonoda et al.'s use of an alkenyl trialkoxy silane under the conditions disclosed will result in moisture curing. In other words, there will be appreciable crosslinking when the silane is used, as disclosed. The use of the anhydride and silane, in the manner taught by Sonoda et al., should not result in compatibilization of the filler and polymeric components by the silane. Finally, while Betso et al. does disclose different possible outcomes, Betso et al.'s disclosure provide no reasons to motivate a person of ordinary skill in the art to modify the teachings of Sonoda et al. so as to achieve compatibilization with the silane.

9. I believe there are number of factors that support my opinions. First, as explained in the specification of Application No.: 09/815,311, anhydrides are more reactive than the organic silanes. Specification at 6, lines 27-30. Accordingly, one of ordinary skill in the art would expect Sonoda et al.'s anhydrides to be the cause of compatibilization of the filler particles and polymer, rather than the silanes. Second, a person of ordinary skill in the art would recognize Sonoda et al.'s disclosure of moisture curing, in the presence of a silanol condensation catalyst (col. 6, lines 41 - 59), as a

well-known technique to crosslink polymers and not as a technique to couple filler particles with the polymer. Third, Betso et al. explains the criticality of amount and types of ingredients and conditions such that a person of ordinary skill in the art would not expect the environment described in Sonoda et al. to promote compatibilization by the silanes, as required by the pending claims. Col. 10, lines 59-61. As discussed above, Sonoda et al. expressly teaches the conditions for use of anhydrides as compatibilizers and silanes as moisture curing agents. Col. 5, line 48 to col. 6, line 18; col. 6, lines 41-56.

10. I further declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further, that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Dated: 22.12.2004

By: Eduardo G. Redondo
Eduardo Grizante Redondo